

ENVIRONMENTAL STUDIES

Departmental Facilities

The School of Environmental Studies occupies a suite of office and laboratory space in Queen's Biosciences Complex. All regular faculty members have office space in the Biosciences Complex, and graduate students are provided a combination of flex space and carrels among three common offices.

Proximity to faculty members permits a high degree of interaction. The space held by the School also includes two administrative offices, offices for post-doctoral fellows and Adjunct Faculty, eight laboratories and a school lounge. Ancillary space includes a cold room, two equipment bays. Some faculty members also hold specialized laboratory space in their home departments.

Financial Assistance

Stipends will be provided for PhD students at a minimum of \$23,000 per year for 48 months. Students in the MES research stream receive a stipend of \$16,000 per year for 24 months. Students in the MES course-based stream receive a stipend of \$16,000 for the first 12 months and then a prorated amount for another 8 months in year two at \$10,667.

Resources for stipends are derived from School funds, Queen's Graduate Awards (QGA), research assistantships, teaching assistantships in the School's undergraduate courses, contributions from research grants and contracts, internal scholarships and awards, and/or external scholarships and awards. Where research grants permit, or when students earn a Scholarship or Fellowship from outside the School, some students may receive a higher stipend. The funding policy for each academic year is posted on the School's website.

Students are automatically considered for School funding, QGA Awards, and Research/Teaching Assistantships when accepted each year. Students are only accepted when a potential supervisor or advisor (MES only) has agreed to work with them. Students must take the initiative for Scholarships awarded by either Queen's University or some outside agency (e.g. NSERC, SSHRC), and the School will endeavour to keep all students informed of opportunities.

Fields in the Program

The School of Environmental Studies provides opportunities for advanced interdisciplinary graduate level studies and research in the field of environmental sustainability. The program will provide an appreciation of the breadth of environmental issues, and the ability to interact with professionals outside a single discipline. In this context, sustainability is the study of the natural world and

human activities within it, seeking ways that the desirable features of these can be maintained or even enhanced locally, throughout the world, and over time. We think of sustainability in terms of a tripod of issues, environmental, economic, and social, all of which will be examined in detail individually and in their interconnectedness. Sustainability studies, therefore, are interdisciplinary and focused on many situations including resource and land management, industrial and agricultural sustainability, and development of nations.

Within the School, the different perspectives and foci are reflected in the experience of the various faculty members. Current research is related to the three elements of sustainability indicated above, including the natural sciences, health sciences, and social sciences and humanities. A variety of projects are relevant to water quality and quantity, as it relates to human and ecological health, provision of municipal and agricultural water supplies, social justice, and the detection and mitigation of water-related problems. Other projects focus on broad issues of human and ecosystem health within urban and agricultural settings in various locations around the world.

Thesis and project research will fall in these areas, but always within the wider context of sustainability, which will be upheld through interdisciplinary supervision (among departments, between Queen's and the Royal Military College, and in collaboration with outside agencies), course work and a broad-based seminar series.

Faculty

Director

Danby, R.

Graduate Coordinator

Goebel, A.

Professor

Goebel, A., Hird, M., Smith, M.(Mick), Winn, L.M.¹

Associate Professor

Brown, S., Danby, R., Orihel, D., Tienhaara, K., Whitelaw, G.S.¹

Assistant Professor

Lowitt, K., McLagan, D., Seiler, C.

Emeritus Professor

Hodson, P.V., Jamieson, H.E., Liss, S.N., vanLoon, G.W.

Cross-Appointed Faculty

Chen, D., Cumming, B.F., Cordoba, D., Friesen, V., Epprecht, M. Legoas, J., Loughheed, S.C., Mabee, W.E., McDonald, D.A.,



Simondo, S., Smol, J., Taylor, M., Vlachopoulos, N.², Wallace, M., Wang, Y.S., Webster, J., Zeeb, B.A.², Zeman, F.S.²

Adjunct Faculty

Baninla, Y., Brinkmann, M.³, Cartwright, L.⁴, Fenech, A.⁵, Hovorka, A.⁶, Hynds, P.⁷, Jacobs, S.¹⁶, Kirk, J.⁸, Kuyek, J., Levkoe, C.⁹, Majury, A.¹⁰, McCarthy, D.¹¹, Pang, A.², Ridal, J.¹², Rutter, A., Skordaki, M.², Viswanathan, L.¹³, Welbourn, P.¹⁴, White, A.¹⁵

Continuing Adjunct

Hall, G., Moore, S.

- ¹ Sabbatical leave
- ² Royal Military College
- ³ University of Saskatchewan
- ⁴ Toronto and Region Conservation Authority
- ⁵ University of Prince Edward Island
- ⁶ York University
- ⁷ Dublin Institute of Technology
- ⁸ Environment Canada
- ⁹ Lakehead University
- ¹⁰ Tongji University
- ¹¹ University of Waterloo
- ¹² St. Lawrence River Institute of Environmental Sciences
- ¹³ Viswali Consulting
- ¹⁴ Retired – University of Toronto
- ¹⁵ Adjunct instructor – Queen's and University of Toronto
- ¹⁶ University of Guelph

Programs of Study

Applicants are accepted under the general regulations of the School of Graduate Studies and Postdoctoral Affairs.

The programs offered conform to the regulations set out by the School of Graduate Studies and Postdoctoral Affairs.

- Environmental Studies - Doctor of Philosophy (<https://queensu-ca-public.courseleaf.com/graduate-studies/programs-study/environmental-studies/environmental-studies-phd/>)
- Environmental Studies - Master of Environmental Studies (<https://queensu-ca-public.courseleaf.com/graduate-studies/programs-study/environmental-studies/environmental-studies-mes/>)

Courses

Not all courses are offered every year. With the exception of ENSC 898, 899 and 999 all courses are 3.0 credit units.

ENSC 801 Methodological and Conceptual Basis for Environmental Studies

The course examines methodological and conceptual issues arising from Environmental Studies position as an inter-, multi- and/or trans-disciplinary practice. It will focus on the inherent difficulties in overcoming disciplinary fragmentation in approaches to studying complex issues in environmental sustainability that require integrated understandings of the inter-relations between social and natural systems. The course will promote methodological literacy beyond student's own area of expertise, develop critical and reflexive thinking about how environmental studies might approach issues of sustainability, and encourage and facilitate communication across disciplinary paradigms. The course precedes and complements ENSC 802, familiarizing students with the historical origins, philosophical underpinnings and practical deployment of key approaches within the social and natural sciences and humanities. Three term-hours; Fall. Course fee(s): field trip fee of \$50.00
PREREQUISITE: permission of instructor

ENSC 802 Global Environmental Problems: Issues in Sustainability

This course focuses on real-world environmental problems analyzing their social, ethical, and biogeochemical origins, economic ramifications, and institutional frameworks for their mitigation and resolution in the context of environmental sustainability. This course would logically follow or run concurrently with ENSC 801, and will deepen and continue the themes through consideration of the intellectual history of theories and concepts relevant to environmental studies, with a focus on the concepts of "sustainability" and "sustainable development". Three term-hours; Winter.
PREREQUISITE: permission of instructor

ENSC 807 Global Water Resources: Challenges and Opportunities

This course investigates water resources from the physical, social, and health aspects common to a diversity of watersheds found across Canada, and around the world. It critically explores a wide range of challenges and opportunities associated with our common connection to water, from water as a human right, to anthropogenic environmental impacts. NOTE Field Trip: estimated cost \$30. (3.0 credit units).
Exclusion: ENSC 407

ENSC 825 Ecotoxicology

An exploration of the interactions among chemical exposure, toxicity to individual organisms, and effects on ecosystem structure and function. Mechanisms of toxicity will be linked to effects at different levels of organization up to the level of the ecosystem, using case studies to explore the complexities of exposure and response. NOTE Field Trip (Local Harbour or

Marina): estimated cost \$30. (3.0 credit units) Exclusion: ENSC 425

ENSC 840 Directed Studies

This course provides an opportunity for students to independently study a selected topic under the supervision of one of more faculty members. This may take the form of a reading course with an assigned paper, but other possible formats would be considered. For detailed information, consult course coordinator. Three term-hours: Fall, Winter, Summer.

PREREQUISITE: permission of course coordinator

ENSC 841 Special Topics

This course focuses on specific topics related to the environment and sustainability. Special topics are offered under the guidance of a faculty member in an area of the instructor's expertise. For detailed information, consult the course instructor. Three term-hours: Fall, Winter or Summer.

Field trip fees may apply, normally less than \$50.00

PREREQUISITE: permission of the instructor

EXCLUSION: varies depending on instructor

ENSC 842 Special Topics

This course focuses on specific topics related to the environment and sustainability. Special topics are offered under the guidance of a faculty member in an area of the instructor's expertise. For detailed information, consult the course instructor. Three term-hours: Fall, Winter or Summer.

Field trip fees may apply, normally less than \$50.00

PREREQUISITE: permission of the instructor

EXCLUSION: varies depending on instructor

ENSC 845 Waste Flows

This course will consider waste as a global human health and environmental crisis that requires interdisciplinary approaches to understand waste as a social justice issue. Various types of waste will be considered as well as various waste governance and management practices. (3.0 credit units)

Exclusion: ENSC 445

ENSC 880 Special Topics in Environmental Science

This course will provide intensive coverage of a topic that is current and/or of special interest in Environmental Science. The course will be multidisciplinary, but with a science focus. Offered periodically by visiting professors or members of faculty. The topic for each year will be announced in advance of course selection and will be made available on the ENSC web page. Students are advised to consult with their academic counsellor and/or the course instructor prior to registration. NOTE Field Trip: estimated cost \$30. (3.0 credit unit).

Exclusion: ENSC 480 when topic is the same.

ENSC 882 Special Topics in Environmental Studies

This course will provide intensive coverage of a topic that is current and/or of special interest in Environmental Studies. The course will cover mainly social science-based material, but will be multidisciplinary. Offered periodically by visiting professors or members of faculty. The topic for each year will be announced in advance of course selection and will be made available on the ENSC web page. Students are advised to consult with their academic counsellor and/or the course instructor prior to registration. NOTE Field Trip: estimated cost \$30. (3.0 credit units)

Exclusion: ENSC 482 when topic is the same

ENSC 898 Master's Project (Course-based)

ENSC 899 Master's Thesis

ENSC 999 Ph.D. Thesis Research